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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,811	12/08/2003	Thomas Hemmerling		2726

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EXAMINER

MANUEL, GEORGE C

ART UNIT PAPER NUMBER

3762

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/730,811

Applicant(s)

HEMMERLING ET AL.

Examiner

George Manuel

Art Unit

3762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/8/0.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18 is/are allowed.
- 6) ☒ Claim(s) 1-12, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 21-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/8/05-8/12/04-5/27/04
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 2, 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Flaherty et al '296.

Flaherty et al discloses means for applying muscle-activating stimulation signals comprising a stimulator and means for sensing pressure waveform signals comprising a plethysmograph and a processor for processing the sensed pressure waveform signals. The examiner is interpreting the electrical signal produced to control the exciter to be sent via an electrode.

Claims 1, 2, 10 and 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Frangioni et al (of record).

The apparatus shown in Fig. 1 appears to be capable of applying muscle-activating stimulation signals and sensing pressure waveform signals. The sound records shown in Figure 2 show a display of the waveforms applied and sensed.

Regarding claim 10, the sensed pressure waveform has a frequency bandwidth of about 2 Hz to about 10 Hz.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-7, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flaherty et al '296.

Flaherty et al show all of the claimed features except for incorporating a display, the controller including a laptop computer or a pocket computer.

Regarding claim 3, Flaherty et al teach in step 142, the processor determines a time at which the amplitude of the filtered signal is at a minimum.

Regarding claim 4, one of ordinary skill in the art would have found it obvious to amplify the pressure waveform detected by the detectors because it is well known to amplify detected physiological signals of relatively low amplitude for computer processing.

Regarding claims 8-11, one of ordinary skill in the art would have found it obvious

to provide a plurality of neurostimulators and pressure waveform sensors for different muscles of the patient because Flaherty et al teach the detector could be placed in a location which would allow it to receive pressures which pass through not only the artery, but skin, muscle, bone, or other tissue. Alternately, for the induced signal cases, a non-linear transfer function, such as the arterial volume versus transmural pressure, can be used to produce harmonics which can be detected using a band-pass filter set at a multiple of the input frequency, to give a signal that could give information about a critical transmural pressure. See paragraph [0125].

Regarding claim 10, one of ordinary skill in the art would have found a microphone an obvious substitution for a piezoelectric plethysmograph because it is well known to use microphones for substitution of piezoelectric devices. See paragraph [0078].

Regarding claim 19, Flaherty et al teach in step 90, the tonometer, plethysmograph and time are sampled.

One of ordinary skill in the art would have found it obvious to substitute a laptop computer or a pocket computer and use a display for the processor 80 because these are obvious variations of a general-purpose computer as suggested by Flaherty et al in paragraph [0107].

***Allowable Subject Matter***


Claims 13-18 are allowed.

Art Unit: 3762

Claims 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Manuel whose telephone number is (571) 272-4952.

  
George Manuel  
Primary Examiner  
Art Unit: 3762

5/17/06